

MOUNTAIN VIEWS

NEWSLETTER OF THE MLRA 6 OFFICE, LAKEWOOD, CO

DECEMBER, 2001

GREETINGS FROM CAM

J. Cameron Loerch, MO 6 Leader/Colorado SSS
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Here we are rounding turn four towards the end of another year. I want to personally extend a Holiday Greeting to all readers and wish you well for the next year. There is much in our lives to be thankful for and I hope you are able to take time this Holiday Season to enjoy your families and relax.

We can all be proud of efforts made this past year in making soils resource information available to a wide range of data users. Both internal and external customers are taking advantage of advancements in technology that enables us to deliver soils information in ways not done before. With the award-winning Soil Data Viewer, we are able to provide access to certified digital soils information in a format useable to most individuals.

This past year Colorado hosted the National Cooperative Soil Survey Conference. (See photos on pages 10 and 11.) It was held in Ft. Collins during the week of June 25-29, 2001. The theme of the conference was **Building for the Future: Science, New Technology & People**. A CD containing the conference proceedings will soon be made available. Representatives from throughout the United States as well as from abroad were in attendance.

One of the highlights of the conference for us here in Colorado was that we were able to promote the Soil Survey of the Rocky Mountain National Park. Each participant of the conference was provided a CD containing a manuscript, SSURGO certified digital soils, tables, and the Soil Data Viewer. The Rocky Mountain Soil Survey was the focus of the mid-week tour, with stops discussing the activities involved with conducting the survey.

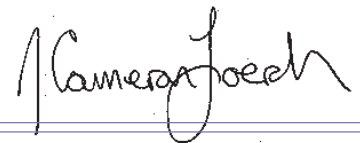
This next year Colorado is fortunate to be hosting the Western Regional Cooperative Soil Survey Conference. It will be held in Telluride, Colorado during the week of July 7-13, 2002. This year's theme is **Exploring New Frontiers**

in Ecological Resources; Integration, Delivery, and Partnerships.

We are planning a Technical Workshop for soil scientists throughout the Southern Rocky Mountains region to be held February 25 - March 1, 2002. In addition to an opportunity for information and idea exchange, the workshop will focus on the following items:

- ◆ Determining estimated soil properties for NASIS population
- ◆ Generating interpretations
- ◆ NASIS data validations and downloads
- ◆ Soil survey project management

I will end my comments with a *thank you* to **Horace Smith**, Soil Survey Division Director, who is retiring the first of January 2002 after 38 years of service to soil science and soil survey. Horace was very supportive of the contributions that field soil scientists make to the soil survey program. His leadership since 1995 is much appreciated: join me in wishing him well in his retirement.



In this issue:

<i>Greetings From Cam</i>	1
<i>Neighboring State Soil Scientists Meet</i>	2
<i>Volcanic Soils of Bandelier National Monument</i>	3
<i>Preparing Photos For Use in Soil Survey</i>	3
<i>Short Takes</i>	4
<i>Grand Stories</i>	5
<i>Who Are These Guys?</i>	6
<i>Near Surface Soil Characteristics Change with Strip Tillage</i>	7
<i>MO 6 Team Building Activity</i>	9
<i>NSSC Conference 2001: Outtakes</i>	10
<i>Revised Prewritten Material for Soil Surveys</i>	12

Neighboring State Soil Scientists Meet

By J. Cameron Loerch, MO 6 Leader/Colorado SSS
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On December 10-12 the NRCS State Soil Scientists from Utah, New Mexico, Wyoming, and Colorado met to discuss technical and management strategies for conducting soil surveys in the Southern Rocky Mountains soil survey region. In addition to reviewing and developing a business plan for fiscal year 2002, the following issues and needed actions surfaced:

- Develop a "template" to describe and define geomorphic relationships of soil map units as part of geomorphology field tours.
- Develop a NASIS data entry "thunderbook" that includes guides to consistently derive estimated soil properties.
- Set up and support field soil survey offices with digital technology in order to use GIS applications in the production and editing of soil surveys. We'll work to digitize "on the fly," eliminate the compilation step, and enable quick access to digital soils information.
- Automate the Employee Development Plan for field soil scientists and update the methods and process for achieving the needed experience levels.
- Revisit the MO-6 pedon description form as to how it is meeting current needs.
- Support development of a field data recorder compatible with the PEDON program for easy download into NASIS.
- Forward the Kansas NASIS PEDON .pdf guide out to all field soil scientists in the MO Region.



From left: Cameron Loerch, Ken Scheffe, Bill Broderson, Charlie Hibner, Darrell Schroeder.

- MO-6 Map unit approval process was discussed and accepted by all states in MO6.
- Colorado will provide the ACCESS Database template for generating Non-tech Soil Descriptions to other States.
- Need to look for opportunities to share expertise and staff between ongoing surveys. Cross political boundaries if needed, county and state.

Upcoming Workshops:

Lakewood (MO-6), Feb 25-Mar 1, 2002:
Deriving estimated soil properties
Soil survey program management

Southern Utah Univ., Cedar City, UT, Aug. 2002:
Soil Data Viewer application for soil survey
production, delivery, and editing
Hands-on training



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State Soil Scientist and MO6 Leader

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Volcanic Soils of Bandelier National Monument

By Thomas Hahn, Soil Data Quality Specialist, and
Charles Hibner, Soil Survey Project Leader
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Since October 2000, the Lakewood MO has been involved in the review and correlation of the soil survey of Bandelier National Monument, New Mexico. This area has some unique soils that are not common to other parts of the Rocky Mountains. Bandelier National Monument is located near Los Alamos, on the flanks of the Pleistocene Jemez caldera, in the Jemez volcanic field of north-central New Mexico. The monument is about 32,800 acres in size. The soil survey was conducted under an agreement with the National Park Service. The Santa Fe soil survey project office staff completed the field work in the 2000 season: Charles Hibner, project leader; Jennifer Putterer and Chad Ferguson, project staff members.

Because of the volcanic origin of the parent materials, some unusual soils are identified and mapped. All of us involved in soil classification had to brush-up on the criteria for andic materials and andisol intergrades. Vitrandic and Vitritorrandic subgroups, ashy and ashy-pumiceous particle-size substitute classes, and glassy mineralogy classes are common. It was very fortunate that the project staff sampled several pedons for the National Soil Survey Lab in 1999 - this provided some basic data on which we based many classifications and "working hypotheses."

Many soils in Bandelier are derived from rather soft rhyolitic tuff that is early Pleistocene age. These soils contain high amounts of volcanic glass (as high as 80% in the fine sand fraction). This glass was attributed to physical weathering of the tuff, rather than to admixtures of volcanic ash. This high content of glass could have placed these soils in the Andisol order, but the oxalate extractable Al and Fe was far too low. Evidently very little glass has weathered to amorphous minerals and to Al and Fe oxides, as is characteristic of Andisols. Instead, these soils classified into the Andisol intergrade classes. One such class is ashy-skeletal, glassy, nonacid, mesic Vitritorrandic Ustorthents (Abrojo series).

Another interesting volcanic feature was the occurrence of pumice deposits. Presumably the pumice originated in nearby volcanic eruptions, perhaps related to the caldera formation. The

deposits seemed to be concentrated in certain landscape positions, probably influenced by eolian processes. Typical pedons have thick horizons containing 70 to 90% pumice. A representative class is ashy-pumiceous, glassy, frigid Vitrandic Haplustolls (Cajete series).

As usual, other intriguing questions arise after this kind of project. Is there a volcanic ash component in soils associated with the pumiceous soils? Do eolian deposits in this area contain a significant ash component, and how far do these deposits extend? It is possible that some tephra from the Jemez volcano and caldera reached parts of southern Colorado. One advantage of correlating soils by physiographic region is the opportunity to study this kind of regional soil-forming factor.

Preparing Photos For Use in Soil Surveys

By Pattie West, Writer-Editor, MO10
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(Note: This is taken from an email from an editor at the NSSC.)

Hi, everybody!

I'm sending this message to everybody I can think of. Please don't be insulted or assume you're the culprit!

I just scanned a set of black and white photos for a soil survey. The prints had been paper clipped together, probably for years. The indentation from the paper clip shows up very clearly on each print! Fortunately, I was able to crop it out on most of them, but it did cause me some trouble.

Please don't ever use paper clips on photos, prints, slides, negatives, or any other photographic medium. Also, do not tape anything to the back of the photo. Captions should be listed (along with the figure number) separately, not attached to the photos. A faint, very small number on the back of the photo, preferably in a corner or at least somewhere around the edges, is all I need to identify which photo goes with which caption. And please don't write the number in such a way that an indentation is made!

Please pass this information along to anybody you think might need it. And, as always, feel free to give me a call if you have any questions!

Thanks! Pattie





Short Takes

Tim Wheeler, Soil Scientist
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Colorado Soil Scientists Contribute to Development of LESA

In 2001, the County LESA committees completed the development of LESA systems for Delta and Larimer Counties. Citizens from various walks of life made up each County's local LESA committee, and they depended upon the support of many experts to develop the system. Many hours of effort were required to identify the objectives, gather data, and design the component land evaluation and site assessment subsystems. Dave Dearstyne and Mike Petersen provided the necessary knowledge of soils and soil data for Delta County and Larimer County, respectively. Since soils, crop production potential, and cropping systems are interrelated, their support was critical to the success of the interdisciplinary technical teams.

The County Commissioners of both Counties have approved their respective systems and are expected to submit them soon to the NRCS State Conservationist for concurrence. If concurred with as suitable for use in the Federal LESA process, the State Conservationist generally will direct the NRCS to use these local systems to evaluate the impact of Federal projects in those counties with the LESA system.

Populating NASIS with Data Elements to Support WEPS, RUSLE2, and CNMPS

In late October and early November, soil scientists in Colorado began populating the additional data elements that the new WEPS and RUSLE2 equations will require. We plan to have these data elements populated before preparing new NASIS downloads to the new versions of Customer Service Toolkit and Soil Data Viewer. Population of eighteen priority survey areas was completed by mid-November, and the remainder will be completed by the end of January. In addition to WEPS and RUSLE2, data elements are being populated to support the Colorado system for comprehensive nutrient management plans. The scientists are also using the time devoted to this project to populate the "important farmland" class if it is not already populated.

The enthusiastic support of the Colorado soil survey offices in completing this task is much appreciated. Completing this project is critical to providing a useful Customer Service Toolkit to NRCS field offices.

Soil Scientists Attend Salinity Symposium Hosted by the Soil and Water Conservation Society

A number of soil scientists in Colorado attended a symposium on soil and water salinity hosted by the Colorado Chapter of the Soil and Water Conservation Society. Soil scientists attending the symposium were Mike Petersen, Terra Mascarenas, Dave Dearstyne, Doug Ramsey, Jim Harrigan, Laura Craven, Cam Loerch, Alan Price, Tom Hahn, and Tim Wheeler. Mike Petersen was a program coordinator and a speaker.

The symposium provided a great learning opportunity and chance to refresh knowledge on salinity and its implications. Speakers included Jim Rhoades, former director of the USDA Salinity Lab and now a consultant, and Gary Banuelos and Steve Grattan of the same Lab.

Colorado Soil Scientists Continue to Evaluate the Use of EMI and GPR

Jim Doolittle of the NSSC came back to Colorado this past September with his electromagnetic induction (EMI) and ground penetrating radar (GPR) equipment to assist soil scientists here in evaluating the correlation of the output of these tools with selected soil properties and to further evaluate their use for soil salinity mapping. In addition to several other trips, Jim came last year to spend 2 weeks in Costilla County to assist in comparing the effectiveness and ease-of-use of different EMI and GPR tools in mapping soil salinity and depth to bedrock. This year he assisted again with these two objectives, spending one week each in the Teller/Park Area and Costilla County soil survey areas.

The effectiveness of EMI for soil salinity mapping has been well established by extensive use of both hand-held and mobilized equipment by Colorado NRCS scientists. Mike Petersen, Area Soil Scientist at Greeley, and Dr. Lorenz Sutherland, Area Agronomist at La Junta and a soil physicist by training, have extensive experience in soil salinity mapping using EMI. There is a need, however, to compare and rate the various instruments available. In addition, several NRCS soil scientists in this state have been promoting the evaluation of use of EMI and GPR technology for estimating the depth to bedrock or other such soil attributes.

Continued on page 8.

Grand Stories

By Don Tetsell, retired District Conservationist and Soil Scientist

The Old Fence

Other than some juniper trees in the canyons of southwest Prowers County plus cottonwoods along the Arkansas River, the county was treeless in settlement days. Steel posts were still in the future, so fencing was a problem.

I was mapping soils south of the town of Granada and found the remains of a very old fence. Smooth wire circled the posts. Staples wouldn't have worked. The posts were made of sandstone.

Before I completed my work there, I located the quarry. Fence building isn't a piece of cake in some areas of Colorado at this time with modern equipment and materials. That pioneer had worked hard to erect his.

Smelling the Roses

I met a kindly older gentleman in rural Montrose County. He was both intelligent and eloquent. He'd served as president of the Colorado Archaeological Society and spent many hours in pursuit of the wily arrowhead. His collection was vast.

He told me that when he was afield with his favorite avocation, he kept an eye out for other items. He gathered minerals, crystals, blue bottles, oddly shaped bits of juniper, and more.

I realized that I did similarly. I'd seen plovers as they nested on overgrazed rangelands in southeastern Colorado, been scolded by long-billed curlews when I entered their domain, snapped up arrowheads that I chanced upon, learned to recognize several grass species, and found a slug from a buffalo hunter's 50 caliber rifle. Once my shovel hole revealed the remains of a Native American. His bones are still encased in what we then mapped as Baca silty clay loam.

I appreciated my occupation more by merely stopping to smell the roses.

Waste Not, Want Not

My first salary check as a soil scientist, after deductions, was less than \$100. Dad thought I'd found the goose that laid the golden egg. His hay at that time sold for \$15-20/ton and our wheat went for \$1.99 in 1951.

Being a child of the Great Depression, I was instilled with a sense of frugality. The same was true of my cohorts on the Mobile Soil Survey Crew. One was perhaps less extravagant than I. I first met him when we were underclassmen at Colorado A&M College, and recall that he wore a red plaid shirt to class on occasion.

During our first year as workmates, the elbows of that shirt gave out, and a snip job with scissors created a short-sleeved garment.

After a detail of some months in 1957 at another location, I joined him at our current headquarters. Until I could find quarters of my own, I was invited to stay in his apartment. One of the first days I was washing dishes. The wash cloth was familiar. It was the last remnant of the red plaid shirt.

Mystery Diamonds

During the early summer of 1957, three of us were detailed to Craig, Colorado. One of our assignments was to classify soils in Brown's Park, a remote area north of Dinosaur National Monument. The Park had some interesting history. The Butch Cassidy Gang had used it for a hideout, and it was once the site of a fur trappers' rendezvous.

After we tumbled out of sleeping bags and tents and cooked over an open fire, we divided the aerial photos and headed out solo for the day's work.

One of the crew members had a tale to tell one evening when he returned to camp. He'd come across a ramshackle house along Vermillion Creek. There were people there, so he decided he'd better explain his presence. He met a young woman and her children. Their clothing was little more than tatters, but the lady sported several diamond rings.

The mystery was solved a month later. A highwayman was apprehended in this lonely country. He'd stop the infrequent travelers, relieve them of their money and valuables, then hide with his family at the Vermillion Creek residence. His lady chose to adorn herself with the ill-gotten jewelry.

Who Are These Guys?

ANDY STEINERT

Hello everyone, my name is Andy Steinert. I recently began work with the USDA-NRCS in Fort Morgan, CO as a soil scientist in mid-April. I will be working along with Jim Borchert on updating and revising the Morgan County soil survey, as well as collecting soil



properties data, adding updates to digital soils maps, and conducting field tests to update soil surveys with "value added resources." These "value added resources" will show us what is happening in and on the soils.

I'm originally from a farm near Hoisington, KS, where we use conventional tillage to raise wheat, sorghum, and cattle. Our farm is approximately 3,000 acres with the majority as cropland. My parents lived there until two years ago when they moved into the small town of Hoisington. My family consists of an older brother and sister, and a twin brother. We still have our farm, just live in town now.

I graduated from Kansas State University with a B.S. in Agronomy - Soil and Water Science Option. I also obtained a secondary degree in Natural Resources and Environmental Sciences. Upon taking numerous courses at KSU, I became more and more interested in soils and thus pursued opportunities of employment that dealt with soils.

Some of my previous experiences were working for the KSU Agronomy Department in the Soil Fertility Lab, Western States Reclamation, Inc., and working on the farm. While working for the Soil Fertility Lab I learned a lot about field research and collecting soil data, as well as performing numerous activities in the lab for data analysis. I also gained some valuable GIS/GPS experience too. Western States Reclamation, Inc. taught me a lot about erosion control on soils. I spent the majority of my time preparing the soil and installing erosion control techniques (erosion control blanket, hydromulching, etc.) at various sites in Denver and the surrounding areas. Working on the farm gave me a different perspective on the soil before going to college, where I could then tie the two

together and understand more of what happens in the soil and on the soil and use that knowledge to help us all understand what we can do better to maintain our soils.

Please feel free to stop by and visit with me if you need anything.



From the top of North Maroon Peak (14,014 feet), Aug. 2000

TONY COLVIN

I work part time for Laura Craven on the Teller/Park county soil survey project. I have done tasks such as map compilation, capability classification, entering data into NASIS, and assisting Laura in placing the Hobo soil temperature units in our area. At times I have also helped out our District Conservationist, Leon Kot, with various projects. I also work for the City of Colorado Springs Utility Department, creating construction drawings in AutoCAD Map 2000.

I received an Associate's degree from Pikes Peak Community College in Colorado Springs in May of 2000. I was in the Natural Resource Technology program at Pikes Peak; classes included Soils, Geology, Forestry, and Conservation. The main emphasis was on GIS and Cartography.

I love to climb Colorado's highest mountains, the "Fourteeners." I have climbed 38 so far; my goal is to climb all 54. I am married, with 2

Continued on page 12.

Near Surface Soil Characteristics Change with Strip Tillage

By Mike Petersen, Area Resource Soil Scientist
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In the summer of 2001, agronomist Jeff Tichota with Monsanto teamed with some NRCS soil scientists to begin a five year study to compare three tillage practices. Working at the private, not-for-profit Irrigation Research Foundation Farm (IRF) north of Yuma, Colorado, we plan to demonstrate the benefits of strip tillage under center pivot irrigation.

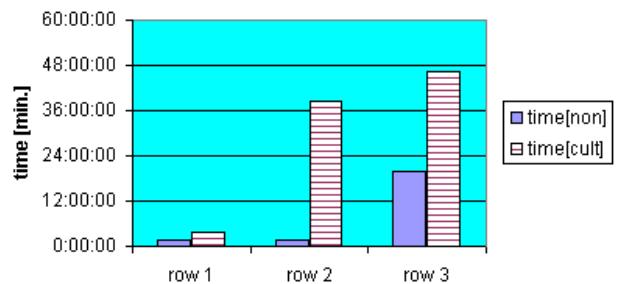
Since the early 1970's, the high plains of eastern Colorado have been farmed intensively with overhead sprinkler irrigation, predominantly raising corn for grain. The growers in eastern Colorado have employed many "sweat hours" preparing the soils under these sprinklers to try and sustain corn yields of 200 to 220 bushels to the acre.

More and more often we have observed that the intensive tillage and "sweat hours" have yielded less for all the work. Why? Soil scientists have studied many different variables in the lab and at research facilities to assist growers to determine the best course of action. We set up a limited five year experiment to study the changes in water transmission into the soil surface and downward permeability. Many growers coming to the IRF, Monsanto, and NRCS to ask about runoff, ponding, crusting effects, and less than desirable yields requested this study. Under a management scheme of five or six pre-plant tillage operations and in-season cultivation, we are finding that scheme detrimental to soil characteristics and yield. These operations break down continuous soil pores, obliterate soil aggregate stability, are abusive to red and brown wiggler worms and other micro and macro-organisms, wreck prior year root channels, damage mycorrhizal fungal hyphae growth, and can cause soil compaction. The grower's thinking is that s/he is aerating the soil and suppressing weed growth in carrying out these pre-plant operations.

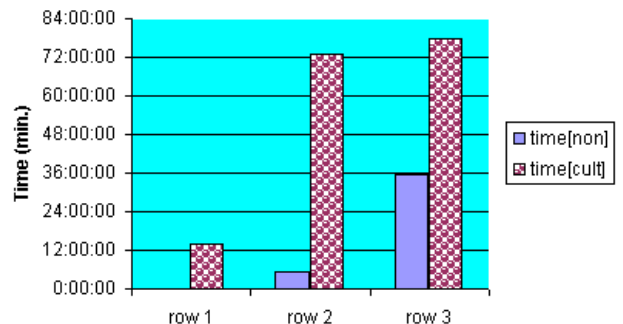
Far too often the soils in the spring are too moist for heavy equipment and shearing action implements to prepare the soils for the seedbed. This activity can and will change the soil transmission of water. Last June we utilized a methodology devised by the National Soil Survey Center to measure surface intake prior to saturation and saturated conditions with a 30cm ring and an application rate of 1 inch of water, simulating a 1-inch rainstorm or irrigation. Our results were quite interesting as we compared

three rows side-by-side in non-cultivated 12 rows versus 12 rows cultivated once. The results are in the following charts and figures.

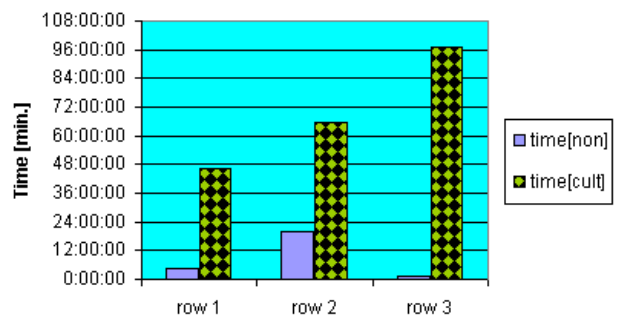
Strip Till Plots Initial Infiltration Rate w/1 inch Irrigation



Mulch Till Plots Initial Infiltration w/1in. Irrigation



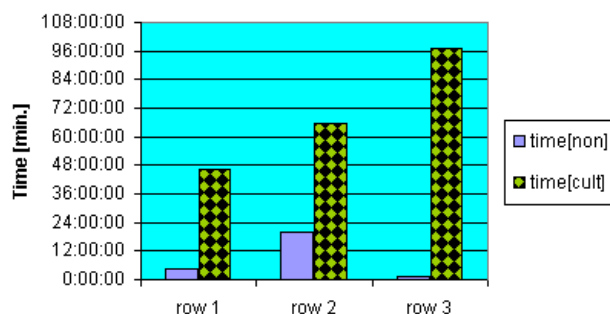
Conventional Till Plots Initial Infiltration w/1 inch Irrigation



Continued on page 8.

Near Surface Soil Characteristics Change with Strip Tillage *Continued from page 7.*

Conventional Till Plots Initial Infiltration w/1 inch Irrigation



In Brief Summary:

In-season cultivation has been for the purpose to aerate and suppress or attempt to control weed growth before the crop reaches canopy and can shade out the weed competition. In 30-inch row crops, weeds can get out of hand, severely extracting moisture from the upper foot of soil and can diminish yields significantly. Growers can be quite habitual, and some believe they must till (cultivate) after the crop reaches a certain height. Herbicides have improved greatly over the last twenty years; and the transgenic technology seed companies now have Roundup Ready seed that allows the grower to apply glyphosate type chemicals [at label rates] and control weeds without damage to the crop. These varieties of corn are part of the project at IRF.

We observed that with the cultivated 12 rows of these demonstration plots the strip till versus conventional disk-plant system was 67% faster in absorbing water with a 1-inch application. In the strip till versus mulch till comparison, under the cultivated 12 rows, the water intake was 47% better under strip till. We believe this is significant for the first year of the demonstration. We realize this will vary, but other researchers have told me we should see more improvement in subsequent years as we continue this demonstration project.

We are also measuring saturated hydraulic conductivity with the use of Amoozemeters at the 10-inch depth, which resides in the old zone of soil compaction for these fields on the IRF. That was completed this year, but the results are inconclusive of anything this first year. We shall keep you informed.



Mike Petersen (Greeley AO) and Andy Steinert (Ft. Morgan SSO) are seen utilizing the infiltration rings and the Marriot bottle to determine intake rate.



Short Takes *Continued from page 4.*

Some of the Colorado staff participated in the September fieldwork, and we intend to continue these activities in other parts of the state so that others will be involved. EMI shows significant correlation with bedrock for some soils and types of bedrock. Many thanks to Laura Craven and Alan Stuebe for making the arrangements for the fieldwork in September. Thanks also to all the others who participated. Alan Price participated both weeks and therefore was able to assist Jim throughout his stay. Thanks to Alan for the support.

Reminder on Field Office Technical Guides Reviews

CO Technical Notice 476, dated March 5, 2001, was distributed this past year. Please review this notice, since it requires that Section II of each field office technical guide (FOTG) be reviewed and updated as necessary once every two years. The Notice provides guidelines on the content and maintenance of Section II. Note that you do not need to review the FOTG for all of your field offices every other year. You may find it more practical to do approximately one-half of them each year, alternating the two sets of FOTGs.

MO6 Team Building Activity

Alan Price, Soil Data Quality Specialist

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For several years soils offices within MLRA Office 6 (MO6) region have been actively engaged in installing soil temperature data collection equipment. Sites are carefully selected so that meaningful data can be collected and then extrapolated to similar areas. Soil temperature data in alpine areas (i.e., areas above timberline) are generally limited to summer months or else do not exist. As a result, in September of 1999, the MO6 staff established five temperature sites. Sites were established on an elevation traverse from mixed conifer (montane) to spruce-fir (subalpine north slopes) to Guanella Pass (alpine) to krummholz (ecotone between alpine and subalpine) and finally to bristlecone pine (subalpine south slopes). Data loggers collect temperature data just above the surface (air temperature) and at 10 cm and 50 cm depth. After one year the data loggers need to be downloaded to permanent storage and subsequent analysis.

On September 7, 2001 members of the MO6 staff decided to combine downloading of temperature data loggers with a team building activity, climbing Mount Bierstadt, a 14,060-foot peak. This peak was selected since the trailhead to begin the ascent is only yards from the Guanella Pass temperature site. Unfortunately the weather in the Denver area that day was rainy with snow in the mountains. We were not optimistic about our chance of reaching the summit on a day with such volatile weather. We decided to drive to the temperature sites and

collect the data anyway. Upon our arrival at Guanella Pass we were surprised to discover only a couple of inches of snow, clear skies, wind, and cool temperatures to keep us from overheating.

None of us had previously attempted to climb a fourteener, and we expected a challenge. Some experienced the fatigue, headaches, and dizziness commonly associated with high elevation, but after about three hours of climbing (and uncountable rest stops) we achieved our goal, the summit.



On top of the world: Mount Bierstadt with Mount Evans in the background.

A logical question to ask is why? Because it's there? There can be tangible results for participating in team building exercises such as this.

- * Develop friendships outside of the work environment
- * Work together as a team to achieve a goal (we encouraged each other)
- * Gain confidence by completing a difficult task (it was hard for me anyway)
- * Enjoy some of Nature's greatest creations (the beautiful scenery of MO6)
- * Loosen-up and don't take life (including the job) too seriously

If your team is interested in climbing a fourteener, this internet site is an excellent source of information on locations, trails, difficulty, and pictures: <http://www.14ers.com/>



Falk Hieke (visiting student from Germany), Steve Park, Cameron Loerch, Alan Price, and Chris Mueller prepare themselves for the ascent. *Nice legs, Chris!*

Continued on page 12.

National Cooperative Soil Survey Conference 2001: *Outtakes*



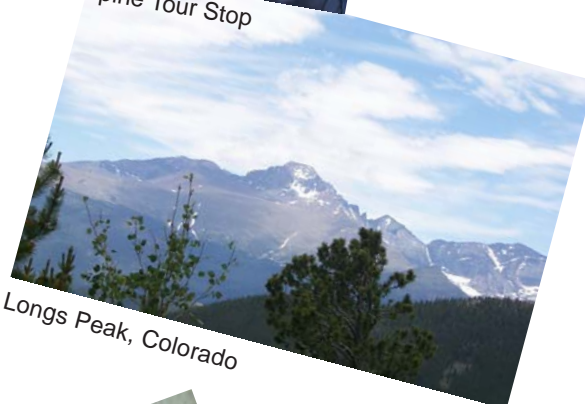
Keynote Speaker David Hammer, Missouri



Dr. Gene Kelly, CSU, Alpine Tour Stop



Lee Sommers, Dean, College of Ag., CSU



Longs Peak, Colorado



Curtis Monger, NMSU



Horace Smith, NRCS



Lee Neve, NRCS, "The Making of the Rocky Mountain Natl. Park Soil Survey."



Horace Smith, Eva Muller, and Maury Mausbach, NRCS

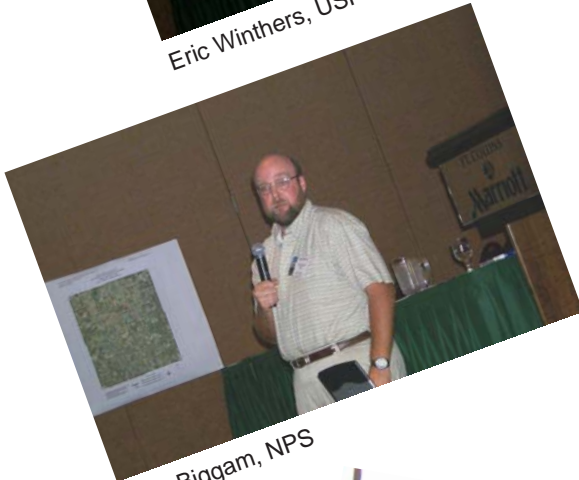
National Cooperative Soil Survey Conference 2001: *Outtakes*



Eric Winthers, USFS



Todd Boldt, NRCS, Bobcat Fire Tour Stop



Pete Biggam, NPS



Steve Park, NRCS, Bobcat Fire Tour Stop



Banquet



Terry Tatsey, Blackfeet College, MT



Tim Wheeler, NRCS



Chris Malouf, University CSIRO, Australia

Who Are These Guys?

Continued from page 6.

daughters and a son. We live in Woodland Park, and all enjoy the outdoors in one way or another.

My goal is to someday get on full time with the NRCS. As well as climbing all those 14ers.



CHRIS GEBAUER



Chris Gebauer grew up in Minnesota, but has been moving around since then. He went to college at Valparaiso University, in Indiana, majoring in biology. Then he went to Kenya for two years, working as an agroforestry extensionist with the Peace Corps. After a brief stint of job-hunting and working for a landscaping company, Chris went back to school, spending three years at Washington State University getting an MS in Natural Resource Sciences. It was at Washington State University that he decided to pursue soil science, taking soils courses and doing a forest grazing research project on soil physical and chemical properties. Prior to coming to Montrose, Chris was in Gallup, NM where he worked for three years with the Bureau of Indian Affairs on the Chinle Valley Soil Survey, on the Navajo Reservation in Northern Arizona.

Chris reported for work in Montrose on November 5. He is enjoying both the job and the people he is working with in Montrose. Chris and his wife both like what they've seen so far of western Colorado and the Montrose area, and they're looking forward to all the hiking, camping and cross-country skiing opportunities.

Revised Prewritten Material for Soil Surveys

By Stanley P. Anderson, Editor

stan.anderson@nssc.nrcs.usda.gov

(Note: This is taken from an email from an editor at the NSSC.)

A revised version of the prewritten material for soil survey manuscripts has been prepared by Stan Anderson, Editor, NSSC, Lincoln, NE, and Pattie West, Editor, Region 10 MLRA Office, St. Paul, MN. This version is designed to accompany the most current version of the NASIS tables. It reflects changes in terminology used in some of the tables and includes material for the new water management table.

The material has been placed on the NSSC ftp site, in the PUB directory, in a folder called SURVEYS, in a folder called PWM2001. The files are text only and do not contain any formatting. The file called NOTES.TXT contains important information about this version of the prewritten material and some instructions to authors of soil surveys.

Significant changes are currently being made to the Glossary used in soil surveys. The changes are needed to bring some of the definitions more in line with correct terminology as reflected in the NSSH. The revised Glossary will be sent out at a later date.

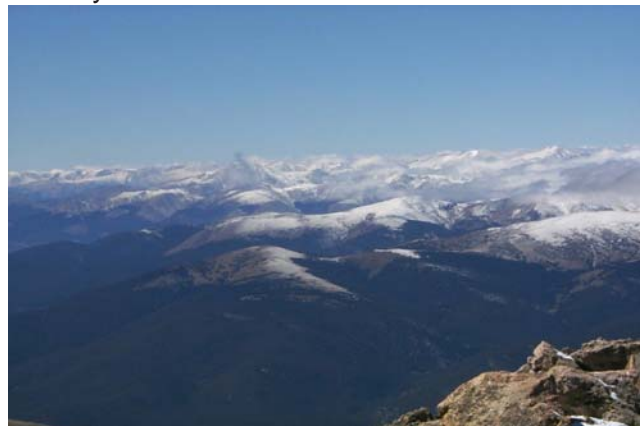
Now a note from our staff: If you have any questions regarding the use of this new material, please contact Carla Green Adams or Tom Hahn at the Lakewood state office.



MO6 Team Building Activity

Continued from page 9.

Set lofty goals, and enjoy the journey. Happy Holidays!



The view from the top is great! (Argentine Peak as viewed from the summit of Mount Bierstadt.)